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$x^{p^n} \equiv x (\mathrm{mod}\, p^n)$ has p and p solutions modp^n. Hence the congruence defines the Galois field of order p^n if and only if $n=1$.

AVERAGE AND PROBABILITY.

148. **Proposed by M. C. RORTY, Boston, Mass.**

Assuming n points to fall at random upon a circle of circumference a, what is the probability of m or more points falling within a length b upon this circumference.

NOTE. This problem has practical application in determining the probability of accidental rushes of telephone calls as distinct from those rushes which are due to commercial causes. The solution for m or more points falling within a specified length b is known. The problem presented above differs from this in that a solution is required for *any* length b.

149 **Proposed by L. C. WALKER, A.M., Professor of Mathematics, Colorado School of Mines, Golden, Col.**

Three points are taken at random on the convex surface of a right cone. Find the probability that the section of the cone made by the plane passing through them is a complete ellipse.

MISCELLANEOUS.

142. **Proposed by R. A. WELLS, Franklin College, New Athens, O.**

Find a general expression for the value of θ such that when θ is one of the acute angles of a right triangle, the three sides of the triangle will be commensurable.

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NOTES.

Dr. C. N. Haskins has been appointed Instructor in Mathematics at Yale University.

Dr. A. B. Pierce has been appointed Instructor in Mathematics at the University of Michigan.

Dr. G. B. Halsted has been elected Professor of Mathematics at Kenyon College, Gambier, O.

Mr. A. C. Minear has been appointed Professor of Mathematics in the University of Southern California, to succeed Mr. Paul Arnold, resigned.

Dr. H. C. DeMott, Principal of the Preparatory Department of the Illinois Wesleyan University, has been promoted to the University chair of mathematics.

In line 14 of Professor Himel's Note in the October number, read "Thus, in the above example, if 2 be true."